

Application Serial No. 10/712,483

1.(cancelled)

2.(currently amended) A method of operating a mobile communication device, comprising the steps of:

calculating parameters indicative of received signal strength over time;

determining whether a predetermined relationship exists between the values of the parameters.~~The method as defined in claim 1, where said step of determining whether a predetermined relationship exists determines~~determining how many predetermined conditions exist; and

determining reselection is imminent if said predetermined relationship exists.

3.(cancelled)

4.(currently amended) ~~The method as defined in claim 3,~~ A method of operating a mobile communication device, comprising the steps of:

calculating parameters indicative of received signal strength over time

wherein said step of calculating includes measuring received signal strength;

determining whether a predetermined relationship exists between the values of the parameters; and

determining reselection is imminent if said predetermined relationship exists, wherein said step of calculating includes computing a plurality of parameters as a mean of the received signal strength measurements.

5.(original) The method as defined in claim 4, wherein said step of determining if at least one predetermined criteria is met determines if a plurality of parameters are met.

6.(currently amended) The method as defined in claim ~~4~~2, further including the step of sending a message to ~~at least one of a virtual bearer and a network~~ upon determining that a reselection is imminent.

7.(currently amended) The method according to ~~claim 4~~claim 2, further including the step of calculating a relative time for said reselection.

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8.(currently amended) The method according to claim 12, further including the step of receive threshold information from the network for controlling ~~mobile~~ said reselection.

9.(currently amended) The method of claim 12, wherein the step of ~~computing~~ calculating comprises performing RSSI measurements.

10.(currently amended) The method of claim 9, wherein the RSSI measurements are computed for every time division multiple access frame in a temporary block flow mode.

11.(currently amended) A method of operating a mobile communication device, comprising the steps of:

calculating parameters indicative of received signal strength over time;

determining whether a predetermined relationship exists between the values of the parameters;

determining reselection is imminent if said predetermined relationship exists;
and

~~The method according to claim 1, further including the step of initiating flow control in response to determining that reselection is imminent.~~

12.(original) The method of claim 11, further including the step of entering flow control in the virtual bearer responsive to a signal received from the network.

13.(original) The method of claim 11, further including the step of entering flow control in the virtual bearer responsive to the message that reselection is imminent.

14.(cancelled)

15.(currently amended) ~~The mobile communication device according to claim 14~~ A mobile communication device, comprising:

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a measurement module;

a reselection predictor coupled to the measurement module, the reselection predictor producing in the mobile communication device a likelihood of cell reselection message based on measurements made by the mobile; and

~~, further including~~ a virtual bearer for applying flow control to the lower layers, the virtual bearer applying flow control responsive to a determination that a cell change is imminent.

16.(original) The mobile communication device according to claim 15, wherein the virtual bearer is coupled to the reselection predictor to receiving the likelihood of cell reselection message from the predictor.

17.(currently amended) ~~The method according to claim 7, A method of operating a mobile communication device, comprising the steps of:~~

calculating parameters indicative of received signal strength over time, wherein said step of calculating further includes performing an n -points sliding parabola calculation by finding required initial sums based on the first y_j reselection criteria values at corresponding moments t_j ;

determining whether a predetermined relationship exists between the values of the parameters; and

determining reselection is imminent if said predetermined relationship exists.

18.(currently amended) The method according to claim 17, wherein said step of calculating further comprises, determining the moment of time T_d at which

$$a_0(T_d) > 0 \ \& \ a_1(T_d) < 0 \ \& \ \text{sign}[a_2(T_d - \Delta T)] < 0 \ \& \ \text{sign}[a_2(T_d + \Delta T)] > 0$$

AND

the m sequentially calculated reselection criteria RC satisfy the following inequalities:

$$RC(T_d + \Delta T) > RC(T_d + 2\Delta T) > RC(T_d + 3\Delta T) > \dots > RC(T_d + m\Delta T) > 0$$

where reselection criteria RC is calculated using a running parabola approximation,

AND

$$\text{sign}[a_0(T_d + m\Delta T)] > 0 \ \& \ \text{sign}[a_1(T_d + m\Delta T)] < 0$$

THEN

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the cell reselection predicted time T_r is

$$T_r = -a_0(T_d) / a_1(T_d).$$

Where

$$a_0 = (P - Ba_1 - Ca_2) / n;$$

$$a_1 = (R - Fa_2) / E;$$

$$a_2 = (S - RQ) / (M - FQ);$$

$$D = S_{i(i)};$$

$$B = S_{t(i)} = S_{t(i-1)} - t_{i-1} + t_i;$$

$$C = S_{u(i)} = S_{u(i-1)} - t_{i-1}t_{i-1} + t_it_i;$$

$$F = S_{m(i)} = S_{m(i-1)} - t_{i-1}t_{i-1}t_{i-1} + t_it_it_i;$$

$$M = S_{uu(i)} = S_{uu(i-1)} - t_{i-1}t_{i-1}t_{i-1}t_{i-1} + t_it_it_it_i;$$

$$P = S_{y(i)} = S_{y(i-1)} - y_{i-1} + y_i;$$

$$R = S_{y(i)} = S_{y(i-1)} - t_{i-1}y_{i-1} + t_it_iy_i;$$

$$S = S_{uy(i)} = S_{uy(i-1)} - t_{i-1}t_{i-1}y_{i-1} + t_it_it_it_iy_i;$$

$$E = S_{u(i)};$$

$$K = S_{u(i)};$$

$$L = S_{m(i)};$$

$$Q = D / n;$$

$$E = E - QB;$$

$$F = F - QC;$$

$$R = R - QP;$$

$$Q = K / n;$$

$$L = L - QB;$$

$$M = M - QC;$$

$$S = S - QP;$$

$$Q = L / E;$$

$$S_{i0} = \sum_{j=1}^n t_j;$$

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$$S_{x0} = \sum_{j=1}^n t_j t_j;$$

$$S_{m0} = \sum_{j=1}^n t_j t_j t_j;$$

$$S_{m0} = \sum_{j=1}^n t_j t_j t_j t_j;$$

$$S_{y0} = \sum_{j=1}^n y_j;$$

$$S_{y0} = \sum_{j=1}^n t_j y_j;$$

$$S_{xy0} = \sum_{j=1}^n t_j t_j y_j;$$

~~$$RC(t) = a_0 + a_1 t + a_2 t^2;$$~~

$$\underline{RC(t) = a_0 + a_1 t + a_2 t^2;}$$